

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B. Final effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory accredited for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event an accredited laboratory is not available to the Discharger for any on-site field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine, such analyses performed by a non-accredited laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any on-site field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine must be kept on-site in the Facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.
- D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E. Monitoring results, including non-compliance, shall be reported at intervals and in a manner specified in this MRP.
- F. Laboratories analyzing monitoring samples shall be accredited by DDW, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- G. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

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State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

- H. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this MRP.
- I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

| Discharge Point Name | Monitoring Location Name | Monitoring Location Description |
|----------------------|--------------------------|---|
| -- | INF-001 | A location where a representative sample of the influent into the Facility can be collected prior to entering into the treatment process. |
| 001 | EFF-001 | A location where a representative sample of the effluent from the Facility can be collected after all treatment processes and prior to being discharged into the San Joaquin River. Latitude: 38° 00' 08.162" N, Longitude: 121° 42' 06.893" W |
| -- | RSW-001 | San Joaquin River, approximately 7 miles upstream of Discharge Point 001. |
| -- | RSW-002 | San Joaquin River, at Jersey Point, U.S. Bureau of Reclamation (USBR) Monitoring Location JER. Latitude: 38° 03' 7.2" N, Longitude: 121° 41' 20.4" W |
| -- | SPL-001 | A location where a representative sample of the municipal water supply can be obtained. |
| -- | FIL-001 | A location where a representative sample of effluent from the tertiary filtration system can be collected immediately following the filters and before the disinfection system. |
| -- | UVS-001 | A location where a representative sample of wastewater can be collected immediately downstream of the ultraviolet light (UV) disinfection system. |

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

- 1. The Discharger shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

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Table E-2. Influent Monitoring

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|--|----------|------------------------------|----------------------------|---------------------------------|
| Flow | MGD | Meter | Continuous | -- |
| Conventional Pollutants | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 24-hr Composite ¹ | 1/Week | 2 |
| Total Suspended Solids | mg/L | 24-hr Composite ¹ | 1/Week | 2 |
| Non-Conventional Pollutants | | | | |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab ³ | 1/Week | 2 |

¹ 24-hour flow proportional composite.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

³ Grab samples shall not be collected at the same time each day to get a complete representation of variations in the influent.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

- When discharging to the San Joaquin River, the Discharger shall monitor tertiary treated effluent at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level (ML):

Table E-3. Effluent Monitoring

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|----------------|------------------------------|----------------------------|---------------------------------|
| Flow to San Joaquin River | MGD | Meter | Continuous | -- |
| Conventional Pollutants | | | | |
| Biochemical Oxygen Demand (5-day @ 20° C) | mg/L | 24-hr Composite ¹ | 2/Week | 2 |
| pH | standard units | Meter | Continuous ³ | 2 |
| Total Suspended Solids | mg/L | 24-hr Composite ¹ | 2/Week | 2 |
| Priority Pollutants | | | | |
| Copper, Total Recoverable | µg/L | Grab | 1/Month | 2,4 |
| Lead, Total Recoverable | µg/L | Grab | 1/Month | 2,4 |
| Mercury, Total Recoverable | ng/L | Grab | 1/Month | 2,4,5 |
| Non-Conventional Pollutants | | | | |
| Ammonia Nitrogen, Total (as N) | mg/L | Grab | 1/Week ^{3,6} | 2 |
| | lbs/day | Calculate | 1/Week | -- |
| Chlorine, Total Residual | mg/L | Grab | 1/Day ⁷ | 2 |
| Chlorpyrifos | µg/L | Grab | 1/Year | 2,8 |
| Diazinon | µg/L | Grab | 1/Year | 2,8 |
| Electrical Conductivity @ 25°C | µmhos/cm | Grab | 1/Week | 2 |
| Hardness, Total (as CaCO ₃) | mg/L | Grab | 1/Month | 2 |

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|------------------------------------|-------|-------------|----------------------------|---------------------------------|
| Methylmercury | ng/L | Grab | 1/Month | 2,5 |
| Nitrate Plus Nitrite, Total (as N) | mg/L | Calculate | 1/Month | -- |
| Temperature | °F | Meter | Continuous ³ | 2 |

¹ 24-hour flow proportional composite.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

³ pH and temperature shall be recorded at the time of ammonia sample collection.

⁴ For priority pollutant constituents, the reporting level (RL) shall be consistent with sections 2.4.2 and 2.4.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (See Attachment E, section IX.C).

⁵ Unfiltered methyl mercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of methylmercury and total mercury shall be by U.S. EPA Method 1630 and 1631 (Revision E), respectively, with an RL of 0.05 ng/L for methylmercury and an RL of 0.5 ng/L for total mercury.

⁶ Concurrent with whole effluent toxicity (WET) monitoring.

⁷ Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Total chlorine residual monitoring is only required when chlorine or chlorine-containing products are used in the treatment process for maintenance purposes (monitoring is not required for the use of chlorinated potable water for filter backwashing). When chlorine or chlorine-containing products are not in use in the treatment process, the Discharger shall so state in the monthly self-monitoring report (SMR).

⁸ Chlorpyrifos and diazinon shall be sampled using U.S. EPA Method 625M, Method 8141, or an equivalent GC/MS method with a lower RL than the Basin Plan water quality objectives of 0.015 µg/L and 0.10 µg/L for chlorpyrifos and diazinon, respectively.

V. WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS

A. Acute Toxicity Testing. The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

- Monitoring Frequency** – When discharging to the San Joaquin River, the Discharger shall perform monthly acute toxicity testing, concurrent with effluent ammonia sampling.
- Sample Types** – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
- Test Species** – Test species shall be rainbow trout (*Oncorhynchus mykiss*).
- Methods** – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
- Test Failure** – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. Chronic Toxicity Testing. The Discharger shall meet the following chronic toxicity testing requirements:

1. Monitoring Frequency – When discharging to the San Joaquin River, the Discharger shall perform routine quarterly chronic toxicity testing. If the result of the routine chronic toxicity testing event exhibits toxicity, demonstrated by the result greater than 16 TUc (as 100/NOEC), the Discharger has the option of conducting two additional compliance monitoring events and performing chronic toxicity testing using the species that exhibited toxicity in order to calculate a median. The optional compliance monitoring events shall occur at least 1 week apart, and the final monitoring event shall be initiated no later than 6 weeks from the routine monitoring event that exhibited toxicity.
2. Sample Types – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control, if selected, shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.
3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. Test Species – The testing shall be conducted using the most sensitive species. The Discharger shall conduct chronic toxicity tests with *Selenastrum capricornutum*, unless otherwise specified in writing by the Executive Officer.
5. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual).
6. Reference Toxicant – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. Dilutions – For routine and compliance chronic toxicity monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. For Toxicity Reduction Evaluation (TRE) monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. Laboratory water control shall be used as the diluent.

Table E-4. Chronic Toxicity Testing Dilution Series

| Sample | Dilutions ¹ (%) | | | | | Control |
|-----------------|----------------------------|----|------|-------|--------|---------|
| | 100 | 25 | 12.5 | 6.25 | 3.125 | |
| % Effluent | 100 | 25 | 12.5 | 6.25 | 3.125 | 0 |
| % Control Water | 0 | 75 | 87.5 | 93.75 | 96.875 | 100 |

¹ Receiving water control or laboratory water control may be used as the diluent.

8. Test Failure – The Discharger must re-sample and re-test as soon as possible, but no later than 14 days after receiving notification of a test failure. A test failure is defined as follows:
 - a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Method Manual, and its subsequent amendments or revisions; or
 - b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in the Method Manual.

- C. **WET Testing Notification Requirements.** The Discharger shall notify the Central Valley Water Board within 24 hours after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.
- D. **WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, WET monitoring shall be reported as follows:
1. **Chronic WET Reporting.** Routine and compliance chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the monthly SMR, and shall contain, at minimum:
 - a. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate;
 - b. The statistical methods used to calculate endpoints;
 - c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
 - d. The dates of sample collection and initiation of each toxicity test; and
 - e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly SMR's shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species, type of test (survival, growth or reproduction), and monitoring type, i.e., routine, compliance, or TRE monitoring.
 2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly SMR's and reported as percent survival.
 3. **TRE Reporting.** Reports for TRE's shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan, or as amended by the Discharger's TRE Action Plan.
 4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:
 - a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
 - b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
 - c. Any information on deviations or problems encountered and how they were dealt with.
- E. **Most Sensitive Species Screening.** The Discharger shall perform re-screening to re-evaluate the most sensitive species if there is a significant change in the nature of the discharge. If there are no significant changes during the permit term, a re-screening must be performed prior to permit re-issuance and results submitted with the Report of Waste Discharge (ROWD).
1. **Frequency of Testing for Species Sensitivity Screening.** Species sensitivity screening for chronic toxicity shall include, at a minimum, chronic WET testing four consecutive calendar quarters using the water flea (*Ceriodaphnia dubia*), fathead

minnow (*Pimephales promelas*), and green alga (*Pseudokirchneriella subcapitata*). The tests shall be performed using 100 percent effluent and one control. If the first two species sensitivity re-screening events result in no change in the most sensitive species, the Discharger may cease the species sensitive re-screening testing and the most sensitive species will remain unchanged.

2. **Determination of Most Sensitive Species.** If a single test in the species sensitivity screening testing exceeds 1 TUc (as 100/NOEC), then the species used in that test shall be established as the most sensitive species. If there is more than a single test that exceeds 1 TUc (as 100/NOEC), then the species exceeding 1 TUc (as 100/NOEC) that exhibits the highest percent effect shall be established as the most sensitive species. If none of the tests in the species sensitivity screening exceeds 1 TUc (as 100/NOEC), but at least one of the species exhibits a percent effect greater than 10 percent, then the single species that exhibits the highest percent effect shall be established as the most sensitive species. In all other circumstances, the Executive Officer shall have discretion to determine which single species is the most sensitive considering the test results from the species sensitivity screening.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

Land discharge monitoring requirements are included in separate WDR Order R5-2013-0010-001, as amended by Order R5-2018-0050.

VII. RECYCLING MONITORING REQUIREMENTS

Recycling monitoring requirements are included in separate WDR Order R5-2013-0010-001, as amended by Order R5-2018-0050.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger is required to participate in the Delta Regional Monitoring Program¹.

Delta Regional Monitoring Program data is not intended to be used directly to represent either upstream or downstream water quality for purposes of determining compliance with this Order. Delta Regional Monitoring Program monitoring stations are established generally as “integrator sites” to evaluate the combined impacts on water quality of multiple discharges into the Delta; Delta Regional Monitoring Program monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Delta Regional Monitoring Program monitoring data, along with the individual Discharger data, may be used to help establish background receiving water quality for reasonable potential analyses (RPA’s) in an NPDES permit after evaluation of the applicability of the data for that purpose. Delta Regional Monitoring Program data, as with all environmental monitoring data, can provide an assessment of water quality at a specific place and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, effluent data from the Discharger’s discharge and other point and non-point source discharges, receiving water flow volume, speed and direction, and other information to determine the likely source or sources of a constituent that resulted in the exceedance of a water quality objective.

¹ While participating in the Delta Regional Monitoring Program, the Discharger shall continue to submit receiving water data for temperature. At a minimum, one representative upstream receiving water temperature sample shall be submitted annually for the month of January. The temperature data shall be submitted in the January SMR and will be used to determine compliance with the temperature effluent limitation. Temperature data may be collected by the Discharger for this purpose or the Discharger may submit representative temperature data from the Delta RMP or other appropriate monitoring programs (e.g., Department of Water Resources, United States Geological Survey, etc.).

A. Monitoring Location RSW-002

1. The Discharger shall monitor the San Joaquin River at Monitoring Location RSW-002 as follows:

Table E-5. Receiving Water Monitoring Requirements

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|-------------|---------|---------------|----------------------------|---------------------------------|
| Temperature | °F (°C) | Grab or Meter | 1/Month ^{1,2} | ³ |

¹ The Discharger may report results obtained from USBR Station JER to satisfy this monitoring requirements.

² Report daily average temperature.

³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

IX. OTHER MONITORING REQUIREMENTS

A. Municipal Water Supply

1. Monitoring Location SPL-001

- a. The Discharger shall monitor the municipal water supply at Monitoring Location SPL-001 as follows:

Table E-6. Municipal Water Supply Monitoring Requirements

| Parameter | Units | Sample Type | Minimum Sampling Frequency | Required Analytical Test Method |
|---|----------|-------------|----------------------------|---------------------------------|
| Electrical Conductivity @ 25°C ¹ | µmhos/cm | Grab | 1/Year | ² |
| Standard Minerals ³ | mg/L | Grab | 1/Year | ² |
| Total Dissolved Solids ¹ | mg/L | Grab | 1/Year | ² |

¹ If the water supply is from more than one source, the electrical conductivity and total dissolved solids shall be reported as a weighted average and include copies of supporting calculations.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods requested by the Discharger that have been approved by the Central Valley Water Board or the State Water Board.

³ Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

B. Filtration System and Ultraviolet Light (UV) Disinfection System

1. Monitoring Locations UVS-001 and FIL-001

- a. The Discharger shall monitor the filtration system at Monitoring Location FIL-001 and the UV disinfection system at Monitoring Location UVS-001 as follows:

Table E-7. Filtration System and UV Disinfection System Monitoring Requirements

| Parameter | Units | Sample Type | Monitoring Location | Minimum Sampling Frequency |
|---------------------------------|-------------|-------------|---------------------|----------------------------|
| Flow | MGD | Meter | UVS-001 | Continuous ¹ |
| Turbidity ² | NTU | Meter | FIL-001 | Continuous ^{1,3} |
| Number of UV banks in operation | Number | Observation | N/A | Continuous ¹ |
| UV Transmittance | Percent (%) | Meter | UVS-001 | Continuous ¹ |

| Parameter | Units | Sample Type | Monitoring Location | Minimum Sampling Frequency |
|---------------------------------------|--------------------|-------------|---------------------|----------------------------|
| UV Dose ⁴ | mJ/cm ² | Calculate | N/A | Continuous ¹ |
| Total Coliform Organisms ² | MPN/100 mL | Grab | UVS-001 | 2/Week |

- ¹ For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration, in which the analyzer(s) is not in operation. If analyzer(s) fail to provide continuous monitoring for more than 2 hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.
- ² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- ³ Report daily average and maximum turbidity.
- ⁴ Report daily minimum hourly average UV dose and daily average UV dose. The minimum hourly average dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose will be averaged based on the actual operation time.

C. Effluent and Receiving Water Characterization

Since the Discharger is required to participate in the Delta Regional Monitoring Program, as described in Attachment E, section VIII, this section only requires effluent characterization monitoring. However, the ROWD for the next permit renewal shall include, at minimum, one representative ambient background characterization monitoring event for priority pollutant constituents¹ during the term of the permit. The ambient background characterization monitoring event shall be conducted at Monitoring Location RSW-001. Data from the Delta Regional Monitoring Program may be utilized to characterize the receiving water in the permit renewal. Alternatively, the Discharger may conduct any site-specific receiving water monitoring deemed appropriate by the Discharger and submit that monitoring data with the ROWD. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point.

1. **Analytical Methods Report.** Within 60 days of permit adoption, the Discharger shall submit a report electronically via CIWQS submittal outlining RL's, MDL's, and analytical methods for the constituents listed in tables E-2, E-3, E-5, E-6 and E-7 (see Table E-10). The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in sections 2.3 and 2.4 of the SIP. The maximum required RL's for priority pollutant constituents shall be based on the ML's contained in Appendix 4 of the SIP, determined in accordance with sections 2.4.2 and 2.4.3 of the SIP. In accordance with section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RL's in the permit, all ML values and their associated analytical methods, listed in Appendix 4, that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value and its associated analytical method, listed in Appendix 4, for inclusion in the permit. Table E-8 provides required maximum RL's in accordance with the SIP.
2. **Quarterly Monitoring.** Samples shall be collected from the effluent (Monitoring Location EFF-001) and analyzed for the constituents listed in Table E-8, below. Quarterly monitoring shall be conducted during the year 2020 (four consecutive samples, evenly

¹ Appendix A to 40 C.F.R. part 423.

distributed throughout the year) and the results of such monitoring shall be submitted to the Central Valley Water Board with the quarterly SMR's. Each individual monitoring event shall provide representative sample results for the effluent.

3. **Sample Type.** Effluent samples shall be taken as described in Table E-8, below.

Table E-8. Effluent Characterization Monitoring

| Parameter | Units | Effluent Sample Type | Maximum Reporting Level ¹ |
|---------------------------------------|-------|----------------------|--------------------------------------|
| 2-Chloroethyl vinyl ether | µg/L | Grab | 1 |
| Acrolein | µg/L | Grab | 2 |
| Acrylonitrile | µg/L | Grab | 2 |
| Benzene | µg/L | Grab | 0.5 |
| Bromoform | µg/L | Grab | 0.5 |
| Carbon Tetrachloride | µg/L | Grab | 0.5 |
| Chlorobenzene | µg/L | Grab | 0.5 |
| Chloroethane | µg/L | Grab | 0.5 |
| Chloroform | µg/L | Grab | 2 |
| Chloromethane | µg/L | Grab | 2 |
| Dibromochloromethane | µg/L | Grab | 0.5 |
| Dichlorobromomethane | µg/L | Grab | 0.5 |
| Dichloromethane | µg/L | Grab | 2 |
| Ethylbenzene | µg/L | Grab | 2 |
| Hexachlorobenzene | µg/L | Grab | 1 |
| Hexachlorobutadiene | µg/L | Grab | 1 |
| Hexachloroethane | µg/L | Grab | 1 |
| Methyl bromide (Bromomethane) | µg/L | Grab | 1 |
| Naphthalene | µg/L | Grab | 10 |
| Tetrachloroethene | µg/L | Grab | 0.5 |
| Toluene | µg/L | Grab | 2 |
| trans-1,2-Dichloroethylene | µg/L | Grab | 1 |
| Trichloroethene | µg/L | Grab | 2 |
| Vinyl chloride | µg/L | Grab | 0.5 |
| Methyl-tert-butyl ether (MTBE) | µg/L | Grab | — |
| Trichlorofluoromethane | µg/L | Grab | — |
| 1,1,1-Trichloroethane | µg/L | Grab | 0.5 |
| 1,1,2- Trichloroethane | µg/L | Grab | 0.5 |
| 1,1-dichloroethane | µg/L | Grab | 0.5 |
| 1,1-dichloroethylene | µg/L | Grab | 0.5 |
| 1,2-dichloropropane | µg/L | Grab | 0.5 |
| 1,3-dichloropropylene | µg/L | Grab | 0.5 |
| 1,1,2,2-tetrachloroethane | µg/L | Grab | 0.5 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | µg/L | Grab | 0.5 |
| 1,2,4-trichlorobenzene | µg/L | Grab | 1 |
| 1,2-dichloroethane | µg/L | Grab | 0.5 |
| 1,2-dichlorobenzene | µg/L | Grab | 0.5 |
| 1,3-dichlorobenzene | µg/L | Grab | 0.5 |
| 1,4-dichlorobenzene | µg/L | Grab | 0.5 |
| 1,2-Benzanthracene | µg/L | Grab | 5 |
| 1,2-Diphenylhydrazine | µg/L | Grab | 1 |
| 2-Chlorophenol | µg/L | Grab | 5 |
| 2,4-Dichlorophenol | µg/L | Grab | 5 |
| 2,4-Dimethylphenol | µg/L | Grab | 2 |
| 2,4-Dinitrophenol | µg/L | Grab | 5 |
| 2,4-Dinitrotoluene | µg/L | Grab | 5 |
| 2,4,6-Trichlorophenol | µg/L | Grab | 10 |
| 2,6-Dinitrotoluene | µg/L | Grab | 5 |

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| Parameter | Units | Effluent Sample Type | Maximum Reporting Level ¹ |
|--|-------|------------------------------|--------------------------------------|
| 2-Nitrophenol | µg/L | Grab | 10 |
| 2-Chloronaphthalene | µg/L | Grab | 10 |
| 3,3'-Dichlorobenzidine | µg/L | Grab | 5 |
| 3,4-Benzofluoranthene | µg/L | Grab | 10 |
| 4-Chloro-3-methylphenol | µg/L | Grab | 5 |
| 4,6-Dinitro-2-methylphenol | µg/L | Grab | 10 |
| 4-Nitrophenol | µg/L | Grab | 10 |
| 4-Bromophenyl phenyl ether | µg/L | Grab | 10 |
| 4-Chlorophenyl phenyl ether | µg/L | Grab | 5 |
| Acenaphthene | µg/L | Grab | 1 |
| Acenaphthylene | µg/L | Grab | 10 |
| Anthracene | µg/L | Grab | 10 |
| Benzidine | µg/L | Grab | 5 |
| Benzo(a)pyrene (3,4-Benzopyrene) | µg/L | Grab | 2 |
| Benzo(g,h,i)perylene | µg/L | Grab | 5 |
| Benzo(k)fluoranthene | µg/L | Grab | 2 |
| Bis(2-chloroethoxy) methane | µg/L | Grab | 5 |
| Bis(2-chloroethyl) ether | µg/L | Grab | 1 |
| Bis(2-chloroisopropyl) ether | µg/L | Grab | 10 |
| Bis(2-ethylhexyl) phthalate ² | µg/L | Grab | 5 |
| Butyl benzyl phthalate | µg/L | Grab | 10 |
| Chrysene | µg/L | Grab | 5 |
| Di-n-butylphthalate | µg/L | Grab | 10 |
| Di-n-octylphthalate | µg/L | Grab | 10 |
| Dibenzo(a,h)-anthracene | µg/L | Grab | 0.1 |
| Diethyl phthalate | µg/L | Grab | 10 |
| Dimethyl phthalate | µg/L | Grab | 10 |
| Fluoranthene | µg/L | Grab | 10 |
| Fluorene | µg/L | Grab | 10 |
| Hexachlorocyclopentadiene | µg/L | Grab | 5 |
| Indeno(1,2,3-c,d)pyrene | µg/L | Grab | 0.05 |
| Isophorone | µg/L | Grab | 1 |
| N-Nitrosodiphenylamine | µg/L | Grab | 1 |
| N-Nitrosodimethylamine | µg/L | Grab | 5 |
| N-Nitrosodi-n-propylamine | µg/L | Grab | 5 |
| Nitrobenzene | µg/L | Grab | 10 |
| Pentachlorophenol | µg/L | Grab | 1 |
| Phenanthrene | µg/L | Grab | 5 |
| Phenol | µg/L | Grab | 1 |
| Pyrene | µg/L | Grab | 10 |
| Aluminum | µg/L | 24-hr Composite ³ | — |
| Antimony | µg/L | 24-hr Composite ³ | 5 |
| Arsenic | µg/L | 24-hr Composite ³ | 10 |
| Asbestos | MFL | 24-hr Composite ³ | — |
| Beryllium | µg/L | 24-hr Composite ³ | 2 |
| Cadmium | µg/L | 24-hr Composite ³ | 0.5 |
| Chromium (Total) | µg/L | 24-hr Composite ³ | 50 |
| Chromium (VI) | µg/L | 24-hr Composite ³ | 10 |
| Copper ⁴ | µg/L | 24-hr Composite ³ | 10 |
| Cyanide | µg/L | 24-hr Composite ³ | 5 |
| Fluoride | µg/L | 24-hr Composite ³ | — |
| Iron | µg/L | 24-hr Composite ³ | — |
| Lead ⁴ | µg/L | 24-hr Composite ³ | 5 |
| Mercury ⁴ | µg/L | Grab | 0.5 |
| Manganese | µg/L | 24-hr Composite ³ | — |
| Nickel | µg/L | 24-hr Composite ³ | 20 |

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| Parameter | Units | Effluent Sample Type | Maximum Reporting Level ¹ |
|---|-----------|------------------------------|--------------------------------------|
| Selenium | µg/L | 24-hr Composite ³ | 5 |
| Silver | µg/L | 24-hr Composite ³ | 2 |
| Thallium | µg/L | 24-hr Composite ³ | 1 |
| Tributyltin | µg/L | 24-hr Composite ³ | -- |
| Zinc | µg/L | 24-hr Composite ³ | 20 |
| 4,4'-DDD | µg/L | 24-hr Composite ³ | 0.05 |
| 4,4'-DDE | µg/L | 24-hr Composite ³ | 0.05 |
| 4,4'-DDT | µg/L | 24-hr Composite ³ | 0.01 |
| alpha-Endosulfan | µg/L | 24-hr Composite ³ | 0.02 |
| alpha-Hexachlorocyclohexane (BHC) | µg/L | 24-hr Composite ³ | 0.01 |
| Aldrin | µg/L | 24-hr Composite ³ | 0.005 |
| beta-Endosulfan | µg/L | 24-hr Composite ³ | 0.01 |
| beta-Hexachlorocyclohexane | µg/L | 24-hr Composite ³ | 0.005 |
| Chlordane | µg/L | 24-hr Composite ³ | 0.1 |
| delta-Hexachlorocyclohexane | µg/L | 24-hr Composite ³ | 0.005 |
| Dieldrin | µg/L | 24-hr Composite ³ | 0.01 |
| Endosulfan sulfate | µg/L | 24-hr Composite ³ | 0.01 |
| Endrin | µg/L | 24-hr Composite ³ | 0.01 |
| Endrin Aldehyde | µg/L | 24-hr Composite ³ | 0.01 |
| Heptachlor | µg/L | 24-hr Composite ³ | 0.01 |
| Heptachlor Epoxide | µg/L | 24-hr Composite ³ | 0.02 |
| Lindane (gamma-Hexachlorocyclohexane) | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1016 | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1221 | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1232 | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1242 | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1248 | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1254 | µg/L | 24-hr Composite ³ | 0.5 |
| PCB-1260 | µg/L | 24-hr Composite ³ | 0.5 |
| Toxaphene | µg/L | 24-hr Composite ³ | -- |
| 2,3,7,8-TCDD (Dioxin) | µg/L | 24-hr Composite ³ | -- |
| Ammonia (as N) ⁴ | mg/L | 24-hr Composite ³ | -- |
| Boron | µg/L | 24-hr Composite ³ | -- |
| Chloride | mg/L | 24-hr Composite ³ | -- |
| Flow ⁴ | MGD | Meter | -- |
| Hardness (as CaCO ₃) ⁴ | mg/L | Grab | -- |
| Foaming Agents (MBAS) | µg/L | 24-hr Composite ³ | -- |
| Mercury, Methyl ⁴ | ng/L | Grab | -- |
| Nitrate (as N) ⁴ | mg/L | 24-hr Composite ³ | -- |
| Nitrite (as N) ⁴ | mg/L | 24-hr Composite ³ | -- |
| pH ⁴ | Std Units | Grab | -- |
| Phosphorus, Total (as P) | mg/L | 24-hr Composite ³ | -- |
| Specific conductance (EC) ⁴ | µmhos/cm | 24-hr Composite ³ | -- |
| Sulfate | mg/L | 24-hr Composite ³ | -- |
| Sulfide (as S) | mg/L | 24-hr Composite ³ | -- |
| Sulfite (as SO ₃) | mg/L | 24-hr Composite ³ | -- |
| Temperature ⁴ | °C | Grab | -- |
| Total Dissolved Solids | mg/L | 24-hr Composite ³ | -- |

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| Parameter | Units | Effluent Sample Type | Maximum Reporting Level ¹ |
|-----------|-------|----------------------|--------------------------------------|
|-----------|-------|----------------------|--------------------------------------|

- ¹ The reporting levels required in this table for priority pollutant constituents are established based on section 2.4.2 and Appendix 4 of the SIP.
- ² In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.
- ³ 24-hour flow proportional composite.
- ⁴ The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-3, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or non-compliance with the specific date and task. If non-compliance is reported, the Discharger shall state the reasons for non-compliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.
4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

B. Self-Monitoring Reports (SMR's)

1. The Discharger shall electronically submit SMR's using the State Water Board's California Integrated Water Quality System (CIWQS) Program website http://www.waterboards.ca.gov/water_issues/programs/ciwqs/. The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMR's including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMR's are required even if there is no discharge. If no discharge occurs during the month, the monitoring report must be submitted stating that there has been no discharge.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-9. Monitoring Periods and Reporting Schedule

| Sampling Frequency | Monitoring Period Begins On... | Monitoring Period | SMR Due Date |
|--------------------|--------------------------------|---|---|
| Continuous | Permit effective date | All | Submit with monthly SMR |
| 1/Day | Permit effective date | (Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling. | Submit with monthly SMR |
| 1/Week | Permit effective date | Sunday through Saturday | Submit with monthly SMR |
| 2/Week | Permit effective date | Sunday through Saturday | Submit with monthly SMR |
| 1/Month | Permit effective date | 1 st day of calendar month through last day of calendar month | First day of second calendar month following month of sampling |
| 1/Quarter | Permit effective date | 1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December | 1 May 1 August 1 November 1 February of following year |
| 1/Year | Permit effective date | 1 January through 31 December | 1 February of following year |

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable RL and the current laboratory's Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
- Dischargers are to instruct laboratories to establish calibration standards so that ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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5. **Multiple Sample Data.** When determining compliance with an average monthly effluent limitation (AMEL), average weekly effluent limitation (AWEL), or maximum daily effluent limitation (MDEL) for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. The Discharger shall submit SMR's in accordance with the following requirements:
 - a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements (WDR's); discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
 - c. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all SMR's for which sample analyses were performed.
7. The Discharger shall submit in the SMR's calculations and reports in accordance with the following requirements:
 - a. **Mass Loading Limitations.** For ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMR's. The mass loading shall be calculated as follows:
$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$
For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.
 - b. **Removal Efficiency (BOD₅ and TSS).** The Discharger shall calculate and report the percent removal of BOD₅ and TSS in the SMR's. The percent removal shall be calculated as specified in section VII.A of the Waste Discharge Requirements.
 - c. **Total Coliform Organisms Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day

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median of total coliform organisms shall be calculated as specified in section VII.D of the Waste Discharge Requirements.

- d. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar annual mass loading values shall be calculated as specified in section VII.B of the Waste Discharge Requirements.
- e. **Temperature Effluent Limitation.** For every day receiving water temperature samples are collected at Monitoring Location RSW-002, the Discharger shall calculate and report the difference between the effluent temperature and the upstream receiving water temperature based on the difference in the effluent temperature at Monitoring Location EFF-001 and receiving water temperature of grab samples collected at Monitoring Location RSW-002. The effluent temperature shall be taken from the daily effluent data for the same time that the river grab sample was collected.
- f. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of S_{AMEL} and S_{AWEL} for the effluent, using the equations in section IV.A.1.f of the Order, and consistent with the Compliance Determination Language in section VII.H of the Waste Discharge Requirements.

C. Discharge Monitoring Reports (DMR's)

DMR's are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMR's together with SMR's using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal will be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at: http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/.

D. Other Reports

1. **Annual Operations Report.** By 1 February of each year (see Table E-10), the Discharger shall submit a written report to the Central Valley Water Board electronically via CIWQS submittal containing the following:
 - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
 - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
 - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
 - d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
 - e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the WDR's.

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2. **Technical Report Submittals.** This Order includes requirements to submit a Report of Waste Discharge (ROWD), special study technical reports, progress reports, and other reports identified in the MRP (hereafter referred to collectively as “technical reports”). Table E-10, below, summarizes all technical reports required by this Order and the due dates for submittal. All technical reports shall be submitted electronically via CIWQS submittal. Technical reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment.

Table E-10. Technical Reports

| Report # | Technical Report | Due Date | CIWQS Report ID |
|--|--|--|-------------------|
| 1 | Report of Waste Discharge | 31 January 2023 | ROWD |
| Compliance Schedule for Final Effluent Limitations for Methylmercury (WDR Section VI.C.7.a) | | | |
| Phase 1 | | | |
| 2 | CVCWA Coordinated Methylmercury Control Study Work Plan. | Complete | WDR VI.C.7.a.i |
| 3 | Update and Implement Pollution Prevention Plan ¹ for Mercury (per section VI.C.3.a) | Complete | WDR VI.C.7.a.ii |
| 4 | Implement CVCWA Coordinated Methylmercury Control Study Work Plan | Immediately following Executive Officer approval | WDR VI.C.7.a.iii |
| 5 | Annual Progress Reports ² | 20 October 2019 | WDR VI.C.7.a.iv.1 |
| 6 | | 20 October 2020 | WDR VI.C.7.a.iv.2 |
| 7 | | 20 October 2021 | WDR VI.C.7.a.iv.3 |
| 8 | | 20 October 2022 | WDR VI.C.7.a.iv.4 |
| 9 | | 20 October 2023 | WDR VI.C.7.a.iv.5 |
| 10 | Final CVCWA Coordinated Methylmercury Control Study | Complete | WDR VI.C.7.a.v |
| Phase 2 | | | |
| 11 | Implement methylmercury control programs | TBD ³ | WDR VI.C.7.a.vi |
| 12 | Full Compliance | 31 December 2030 | WDR VI.C.7.a.vii |
| Other Reports | | | |
| 13 | Pollution Prevention Plan (PPP) for Mercury, Annual Progress Reports | 30 January 2020 | WDR VI.C.3.a |
| 14 | | 30 January 2021 | |
| 15 | | 30 January 2022 | |
| 16 | | 30 January 2023 | |
| 17 | | 30 January 2024 | |
| 18 | Pollution Prevention Plan (PPP) for Salinity, Annual Progress Report | 20 October 2019 | WDR VI.C.3.b |
| 19 | | 20 October 2020 | |
| 20 | | 20 October 2021 | |
| 21 | | 20 October 2022 | |
| 22 | | 20 October 2023 | |
| 23 | Analytical Methods Report | 4 February 2019 | MRP X.C.1 |
| 24 | Annual Operations Report | 1 February 2019 | MRP X.D.1 |
| 25 | | 1 February 2020 | |
| 26 | | 1 February 2021 | |
| 27 | | 1 February 2022 | |
| 28 | | 1 February 2023 | |

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- ¹ The pollution prevention plan for mercury shall be implemented in accordance with section VI.C.3.a.² Beginning **20 October 2019**, and annually thereafter until the Facility achieves compliance with the final effluent limitations for methylmercury, the Discharger shall submit annual progress reports on pollution minimization activities implemented and evaluation of their effectiveness, including a summary of total mercury and methylmercury monitoring results.
- ³ To be determined. Following Phase 1 the Central Valley Water Board will conduct a Phase 1 Delta Mercury Control Program Review that considers: modification of methylmercury goals, objectives, allocations, final compliance date, etc. Consequently, the start of Phase 2 and the final compliance date is uncertain at the time this Order was adopted.

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ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet discusses the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

| | |
|---|--|
| WDID | 5B070105005 |
| CIWQS Facility Place ID | 232656 |
| Discharger | Ironhouse Sanitary District |
| Name of Facility | Water Recycling Facility |
| Facility Address | 450 Walnut Meadows Drive |
| | Oakley, CA 94561 |
| | Contra Costa County |
| Facility Contact, Title and Phone | Chad Davisson, General Manager, (925) 809-3001 |
| Authorized Person to Sign and Submit Reports | Chris Christean, Plant Manager (925) 809-3033 |
| Mailing Address | Same as Facility Address |
| Billing Address | Same as Facility Address |
| Type of Facility | Publicly Owned Treatment Works (POTW) |
| Major or Minor Facility | Major |
| Threat to Water Quality | 1 |
| Complexity | A |
| Pretreatment Program | Not Applicable |
| Recycling Requirements | Recycling regulated under Waste Discharge Requirements (WDR) Order R5-2013-0010-001 (as amended by Order R5-2018-0050) |
| Facility Permitted Flow | 4.3 million gallons per day (MGD), average dry weather flow |
| Facility Design Flow | 4.3 MGD, average dry weather flow |
| Watershed | Sacramento-San Joaquin Delta |
| Receiving Water | San Joaquin River |
| Receiving Water Type | Estuary |

- A. The Ironhouse Sanitary District (hereinafter Discharger) is the owner and operator of the Ironhouse Sanitary District Water Recycling Facility (hereinafter Facility), a POTW.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. The Facility discharges wastewater to the San Joaquin River, a water of the United States within the Sacramento-San Joaquin Delta. The Discharger was previously regulated by Order

R5-2013-0157-01 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0085260 adopted on 6 December 2013 and amended on 9 October 2014 with an expiration date of 1 January 2019. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

- C. When applicable, state law requires dischargers to file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not an NPDES permit requirement.
- D. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its WDR's and NPDES permit on **3 July 2018**. The application was deemed complete on **6 August 2018**.
- E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed 5 years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. Under 40 C.F.R. section 122.6(d), states authorized to administer the NPDES program may administratively continue state-issued permits beyond their expiration dates until the effective date of the new permits, if state law allows it. Pursuant to California Code of Regulations (CCR), Title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Oakley, Bethel Island, and some unincorporated areas of Contra Costa County and serves an estimated population of 44,000. The design average dry weather flow capacity of the Facility is 4.3 MGD and 8.6 MGD maximum wet weather flow.

A. Description of Wastewater and Biosolids Treatment and Controls

The treatment system at the Facility consists of preliminary influent coarse and fine screening, vortex grit removal, biological treatment using anoxic basins and aeration basins including nitrification and denitrification, a membrane bioreactor system, and ultraviolet light (UV) disinfection.

The Facility has a treatment capacity and permitted design flows of 4.3 MGD, average dry weather flow, and 8.6 MGD, maximum wet weather flow. The average influent rate from January 2015 through December 2017 (i.e., the last 3 years) was 2.432 MGD, with a maximum influent flow of 4.433 MGD.

The Facility is designed to treat biosolids to Class B, as defined in 40 C.F.R. part 503. Waste sludge is mixed with a polymer and dewatered via two belt filter presses. The Facility produces approximately 488.33 dry metric tons of dried biosolids, annually (Average 2016-2017). Since the previous permit there has been a change in the final disposal method for biosolids. Up through September 2016, the Discharger sent biosolids at the Potrero Hills Landfill for use as an alternative daily cover. Starting in October 2016, biosolids are sent for land application at composting at the Synagro Central Valley Compost Facility. Additionally, starting in July of 2018, biosolids are also applied at the Facility site in accordance with requirements in the WDR Order R5-2013-0010-001, as amended by Order R5-2018-0050.. Transportation and disposal/reuse of the biosolids are regulated by U.S. EPA under 40 C.F.R. part 503. The Discharger's solids handling specifications are covered under separate WDR Order R5-2013-0010-001, as amended by Order R5-2018-0050.

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B. Discharge Points and Receiving Waters

1. The Facility is located in Section 24, T2N, R2E, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point 001 to the San Joaquin River, a water of the United States within the legal boundary of the Sacramento-San Joaquin Delta, at a point latitude 38° 02' 40.75" N and longitude 120° 41' 40.21" W.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in Order R5-2013-0157-01 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2013-0157-01 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

| Parameter | Units | Effluent Limitation | | | Monitoring Data (January 2015 – December 2017) | | |
|--|----------------------|---------------------|------------------|------------------------------------|---|----------------------------------|-------------------------|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |
| Flow | MGD | -- | -- | 4.3 ¹ | -- | -- | 4.619 ² |
| Conventional Pollutants | | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 10 | 15 | 20 | 2.9 | 4.8 | 6.0 |
| | lbs/day ³ | 359 | 537 | 717 | 96 | 102.7 | 109 |
| | % Removal | 85 | -- | -- | 98.9 ⁴ | -- | -- |
| pH | standard units | -- | -- | 6.5 – 8.5 | -- | -- | 6.5 – 8.1 |
| Total Suspended Solids | mg/L | 10 | 15 | 20 | 3.0 | 6.0 | 12 |
| | lbs/day ³ | 359 | 537 | 717 | 55.5 | 124.4 | 222 |
| | % Removal | 85 | -- | -- | 90.8 ⁴ | -- | -- |
| Priority Pollutants | | | | | | | |
| Mercury, Total Recoverable | grams/year | 8.65 ⁵ | -- | -- | 1.82 ⁶ | -- | -- |
| Non-Conventional Pollutants | | | | | | | |
| Ammonia, Total (as N) | mg/L | 1.1 | -- | 2.1 | 0.16 | -- | 0.35 |
| | lbs/day ³ | 39.4 | -- | 75.3 | 3.5 | -- | 6.76 |
| Chlorpyrifos | µg/L | ⁷ | -- | ⁸ | ND | -- | ND |
| Diazinon | µg/L | ⁷ | -- | ⁸ | ND | -- | ND |
| Electrical Conductivity @ 25°C | µmhos/cm | 1,505 | -- | -- | 1,310 | -- | -- |
| Methylmercury | grams/year | 0.030 ⁹ | -- | -- | -- | -- | -- |
| Temperature | °F | -- | -- | ¹⁰ | -- | -- | 19.9 ¹¹ |
| Total Coliform Organisms | MPN/100 mL | 2.2 ¹² | 23 ¹³ | 240 ¹⁴ | -- | -- | 2.0 |
| Acute Toxicity | % Survival | -- | -- | 70 ¹⁵ /90 ¹⁶ | -- | -- | 100 ¹⁷ |

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| Parameter | Units | Effluent Limitation | | | Monitoring Data (January 2015 – December 2017) | | |
|-----------|-------|---------------------|-------------------|------------------|---|---|-------------------------------|
| | | Average Monthly | Average Weekly | Maximum Daily | Highest Average Monthly Discharge | Highest Average Weekly Discharge | Highest Daily Discharge |

ND – Non-Detect

- 1 Applied as an average dry weather flow effluent limitation.
- 2 Represents the maximum observed daily discharge.
- 3 Based on an average dry weather flow of 4.3 MGD.
- 4 Represents the minimum reported percent removal.
- 5 Interim annual mass loading effluent limitation, effective until 31 December 2030.
- 6 Represents the maximum total calendar annual mass load.
- 7 Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\ avg}}{0.079} + \frac{C_{C\ avg}}{0.012} \leq 1.0$$

$$C_{D\ M-AVG} = \text{average monthly diazinon effluent concentration in } \mu\text{g/L.}$$

$$C_{C\ M-AVG} = \text{average monthly chlorpyrifos effluent concentration in } \mu\text{g/L.}$$
- 8 Maximum Daily Effluent Limitation

$$S_{MDEL} = \frac{C_{D\ max}}{0.16} + \frac{C_{C\ max}}{0.025} \leq 1.0$$

$$C_{D\ max} = \text{maximum daily diazinon effluent concentration in } \mu\text{g/L.}$$

$$C_{C\ max} = \text{maximum daily chlorpyrifos effluent concentration in } \mu\text{g/L.}$$
- 9 Final annual mass loading effluent limitation effective 31 December 2030.
- 10 The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
- 11 Reflects the maximum difference between the effluent and natural receiving water temperature at Monitoring Locations EFF-001 and RSW-002, respectively.
- 12 Applied as a 7-day median effluent limitation.
- 13 Not to be exceeded more than once in any 30-day period.
- 14 Applied as an instantaneous maximum effluent limitation.
- 15 Minimum percent survival for any one bioassay.
- 16 Median percent survival of three consecutive acute bioassays.
- 17 Represents the minimum observed percent survival.

D. Compliance Summary

The Discharger was not subject to any enforcement actions during the term of Order R5-2013-0157-01.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

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B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of chapter 3 of CEQA, (commencing with section 21100) of division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.
 - a. **Basin Plan.** The Central Valley Water Board adopted a *Water Quality Control Plan, Fifth Edition* (Revised May 2018), for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Beneficial uses applicable to the San Joaquin River within the Sacramento-San Joaquin Delta are as follows:

Table F-3. Basin Plan Beneficial Uses

| Discharge Point | Receiving Water Name | Beneficial Use(s) |
|-----------------|----------------------|--|
| 001 | San Joaquin River | <u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PROC); industrial service supply (IND); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm spawning, reproduction, and/or early development (SPWN); wildlife habitat (WILD); navigation (NAV); and commercial and sport fishing (COMM). |

- b. **Bay-Delta Plan.** The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in December 2006 by the State Water Board, superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999, and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project (CVP) and the State Water Project (SWP) in the Southern Delta, and approves a petition to change places of use and purposes of use of the CVP. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.
 - c. **Thermal Plan.** The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on 7 January 1971, and amended this plan on 18 September 1975. The Thermal Plan contains temperature objectives for surface waters.

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The Thermal Plan is applicable to the discharge from the Facility. For the purposes of the Thermal Plan, the Discharger is considered to be an Existing Discharger of Elevated Temperature Waste to an Estuary, as defined in the Thermal Plan. The Thermal Plan in section 5.A contains the following temperature objectives for surface waters that are applicable to this discharge:

"5. Estuaries

A. Existing dischargers

(1) Elevated temperature waste discharges shall comply with the following:

- a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.*
- b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.*
- c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.*
- d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses."*

The Discharger's *Antidegradation Analysis for the Ironhouse Sanitary District Wastewater Treatment Plant, December 2007* (Roberston-Bryan, Inc.) showed that the effluent will not increase the receiving water temperature by more than 1.3°F within the zone of initial mixing. Since the diffuser is 150 feet long at the San Joaquin River where it is 3,300 feet wide, the discharge will not cause a 1°F increase for more than 25 percent of the river cross-section. Requirements of this Order implement the Thermal Plan.

- d. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* on 16 September 2008, and it became effective on 25 August 2009. This plan supersedes other narrative sediment quality objectives, and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. Requirements of this Order implement sediment quality objectives of this plan.
2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.
3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives

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established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, which became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("*Statement of Policy with Respect to Maintaining High Quality of Waters in California*") (State Antidegradation Policy). The State Antidegradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Antidegradation Policy requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and the State Antidegradation Policy. The Central Valley Water Board finds this Order is consistent with the federal and State Water Board antidegradation regulations and policy.
5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels (MCL's) designed to protect human health and ensure that water is safe for domestic use.
7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
8. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective*".

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The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis (RPA) based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

9. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Permit No. CAS000001) (General Storm Water Permit) does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board (Finding I.B.20). All storm water at the Facility is captured and directed to the Facility headworks for treatment and disposal under this Order. Therefore, coverage under the General Storm Water Permit is not required.

D. Impaired Water Bodies on CWA 303(d) List

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments (WQLS's). The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 6 April 2016, U.S. EPA gave final approval to California's 2014 and 2016 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of WQLS's, which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLS's]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The listing for the western portion of the Sacramento-San Joaquin Delta, which includes the San Joaquin River, includes chlorpyrifos, dichlorodiphenyltrichloroethane (DDT), diazinon, electrical conductivity, group A pesticides, invasive species, mercury, and unknown toxicity.
2. **Total Maximum Daily Loads (TMDL's).** Table F-4, below, identifies the 303(d) listings and TMDL's for the western portion of the Sacramento-San Joaquin Delta. This permit includes water quality-based effluent limitations (WQBEL's) that are consistent with the assumptions and considerations of the applicable waste load allocations (WLA's) in the 2007 TMDL for diazinon and chlorpyrifos and the 2011 TMDL for methylmercury.

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Table F-4. 303 (d) List for the Sacramento-San Joaquin Delta (Western Portion)

| Pollutant | Potential Sources | TMDL Status |
|-------------------------|--|---|
| Chlorpyrifos | Agriculture, Urban Runoff/Storm Sewers | Adopted and Effective (10 October 2007) |
| DDT | Source Unknown | Planned for Completion (2011) |
| Diazinon | Source Unknown | Adopted and Effective (10 October 2007) |
| Electrical Conductivity | Source Unknown | Planned for Completion (2019) |
| Group A Pesticides | Source Unknown | Planned for Completion (2011) |
| Invasive Species | Source Unknown | Planned for Completion (2019) |
| Mercury | Resource Extraction | Adopted and Effective (20 October 2011) |
| Unknown Toxicity | Source Unknown | Planned for Completion (2019) |

3. The 303(d) listings and TMDL's have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in section IV.C.3 of this Fact Sheet.

E. Other Plans, Policies and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., § 1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that *“are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.”* Federal regulations, 40 C.F.R. section 122.44(d)(1)(vi), further provide that *“[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”*

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include WQBEL's to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-17.00 contains an implementation policy, *“Policy for Application of Water Quality Objectives,”* which specifies that the Central Valley Water Board *“will,*

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on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.” This policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA’s published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board’s “Policy for Application of Water Quality Objectives”)(40 C.F.R. § 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: *“All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.”* (Basin Plan at III-8.00) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents’ objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, *“...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCL’s)”* in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCL’s. The narrative tastes and odors objective states: *“Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.”*

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.
2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the Facility. Federal regulations, 40 C.F.R. section 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives be established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.
4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility’s systems).** This prohibition is based on 40 C.F.R. section 122.41 et seq. that requires the proper design and operation of treatment facilities.

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5. **Prohibition III.E (No discharge of hazardous waste).** This prohibition is based on CCR, Title 22, section 66261.1 et seq. that prohibits discharge of hazardous waste.
6. **Prohibition III.F (Average Dry Weather Flow).** This prohibition is based on the design average dry weather flow treatment capacity rating for the Facility and ensures the Facility is operated within its treatment capacity. Previous Order R5-2013-0157-01 included flow as an effluent limit based on the Facility design flow. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements, at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTW's [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal regulations at 40 C.F.R. part 133 establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. In addition, 40 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month. This Order requires WQBEL's that are equal to or more stringent than the secondary technology-based treatment described in 40 C.F.R. part 133 (see section IV.C.3.d of the Fact Sheet for a discussion on pathogens, which includes WQBEL's for BOD₅ and TSS).
- b. **pH.** The secondary treatment regulations at 40 C.F.R. part 133 also require that pH be maintained between 6.0 and 9.0 standard units. This Order, however, requires more stringent WQBEL's for pH to comply with the Basin Plan's water quality objectives for pH.

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**Summary of Technology-Based Effluent Limitations
Discharge Point 001**

Table F-5. Summary of Technology-Based Effluent Limitations

| Parameter | Units | Effluent Limitations | | | | |
|--|----------------|----------------------|-----------------|---------------|-----------------------|-----------------------|
| | | Average Monthly | Average Weekly | Maximum Daily | Instantaneous Minimum | Instantaneous Maximum |
| Conventional Pollutants | | | | | | |
| Biochemical Oxygen Demand (5-day @ 20°C) | mg/L | 30 ¹ | 45 ¹ | -- | -- | -- |
| | % Removal | 85 | -- | -- | -- | -- |
| pH | standard units | -- | -- | -- | 6.0 ¹ | 9.0 ¹ |
| Total Suspended Solids | mg/L | 30 ¹ | 45 ¹ | -- | -- | -- |
| | % Removal | 85 | -- | -- | -- | -- |

¹ More stringent WQBEL's are applicable to the discharge and are included in this Order, as described further in section IV.C.3 of this Fact Sheet.

C. Water Quality-Based Effluent Limitations (WQBEL's)

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as technology equivalence requirements, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in section IV.C.3 of this Fact Sheet.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBEL's must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 C.F.R. section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's when necessary is intended to protect the designated uses of the receiving water, as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

Finally, 40 C.F.R. section 122(d)(1)(vii) requires effluent limits to be developed consistent with any available WLA's developed and approved for the discharge.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters

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addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for MUN.

The Basin Plan on page II-1.00 states: *“Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...”* and with respect to disposal of wastewaters states that *“...disposal of wastewaters is [not] a prohibited use of waters of the state; it is merely a use which cannot be satisfied to the detriment of beneficial uses.”*

The federal CWA section 101(a)(2) states: *“it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.”* Federal regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the state be regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 C.F.R. section 131.3(e) defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal regulation, 40 C.F.R. section 131.10, requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected, and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

- a. **Receiving Water and Beneficial Uses.** The San Joaquin River Basin covers over 15,000 square miles and includes the entire drainage area to the San Joaquin River. Most of the valley floor is agricultural land, with an agricultural history dating back to the 1870's. The San Joaquin River originates from the Sierra Nevada Mountain Range and flows through the northern portion of the San Joaquin Valley to its terminus in the Sacramento-San Joaquin Bay estuary. The San Joaquin River extends approximately 134 miles from Friant Dam to Stevenson, where flows are intermittent, and approximately 60 miles from Stevenson to Vernalis, where flows are perennial. Runoff from rain events occurring in the San Joaquin Valley provide short-term increases in San Joaquin River flows. River flow during the summer is primarily composed of dam releases of snow-melt water for agricultural, urban, recreational, and wildlife purposes, and agricultural wastewater. At the point of discharge from the Facility, the San Joaquin River is within the boundary of the Sacramento-San Joaquin Delta.

The San Joaquin River in the vicinity of the Facility is strongly influenced by both tidal and river flows. The river flow is westerly during ebb tides and periods of high Delta outflow. During strong flood (incoming) tides, the river flow reverses towards the east. Tides in the Bay Area are classified as mixed semi-diurnal, with two flood tides and two ebb tides of unequal range occurring over a 24.8-hour period. Mean tidal range is about 3 feet. Currents in the commercial shipping channel can be as high as 1.1 to 1.5 feet per second.

The magnitude of tidal influence in the area fluctuates with gravitational influences (solar and lunar) and with freshwater outflow from the Delta. Freshwater outflow varies seasonally as well as in extended cycles. Low levels of inflow are considered to be 3.5 to 5 million cubic feet per second (cfs), while higher levels may range from 7.5 to 15 million cfs. Water diversions by the SWP and the CVP have had

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